

REMARKS

Claims 1 – 41 were present in the original PCT application. During the PCT phase, the claims were amended to include only claims 1 – 37. By a preliminary amendment filed on August 17, 2006, claims 5, 6, 10, 11-14, 17, 19, 20, 22-25, 28-32, 34, 35 and 36 were amended. In response to a Restriction Requirement mailed on May 25, 2010, claims 1-13 and 32 – 37 were elected for further prosecution. Herein, claims 2 and 32 – 36 have been canceled without prejudice, claims 1, 3 – 6, 11, 13 and 37 have been amended and new claims 38 – 49 have been added.

No new matter has been added by the present amendments and claims 1, 3-13 and 37 – 49 are currently pending in this application. The rejections in the Office Action are addressed below.

Rejections under 35 U.S.C. §112, second paragraph

In a Non-Final Office Action dated September 23, 2010, claims 1-13 and 32-37 were rejected under 35 U.S.C. §112, second paragraph as indefinite. Claims 1 – 5, 13, 32 - 35 and 37 all were rejected at least in part due to the fact that the claims contained or referenced a broad limitation for a particular property and then a more narrow limitation for the same property. With the exception of claims 2 and 32 – 35, which have been canceled, the claims have been amended to correct this language.

The Office Action also stated that claims 1, 4, 6, 11, 13, 34, 35 and 37 have one or more antecedent basis problems. These claims have been amended in order to clarify the language used, with the exception of claims 2, 34 and 35, which have been canceled. Claim 36 was also rejected as indefinite and has been canceled without prejudice.

Rejection under 35 U.S.C. §102(b)

The Office Action states that claims 32 – 36 are rejected as anticipated by Scharsschmidt et al. (U.S. Pat. No. 3,615,677). Because claims 32-36 have been canceled without prejudice, Applicant believes this rejection is now moot.

Rejections under 35 U.S.C. §103(a)

The Office Action also states that claims 1-4, 7 – 13, and 37 are rejected as unpatentable over Scharschmidt et al. (U.S. Pat. No. 3,615,677). The Office Action explains that Scharschmidt et al. teaches a process of making high protein pasta products including the steps of forming a raw dry mixture of 45-85% corn flour, 15-40% soy flour and 0-30% wheat flour, metering water into the mixture to form a dough, extruding the dough into the desired form and drying the shaped pasta product to a final moisture content of less than about 12%. The Office Action also characterizes the process taught in Scharschmidt et al. as also comprising a step of

gelatinizing the starch, either before, during, or after extrusion. The Office Action states that the gelatinization step may be effected during extrusion by jacketed heating equipment, such as steam, potentially live steam sparged directly into the dough during extrusion. In such case, the Office Action states that the moisture of the composition being extruded is about 25-50% and that additional additives such as hydrophilic colloids, egg, protein, etc can be added to the dough.

The Office Action states that Scharschmidt et al. does not disclose the temperature of the water and vapor, the ratio of water to vapor, the vapor exposure time, the adding of a monoglyceride, diglyceride or hardened fat, the pressure as claimed, or the making of fresh pasta. However, the Office Action states that these are parameters that would have been obvious to one of skill in the art or that could have been achieved through routine experimentation by one of skill in the art.

Without admitting to the propriety of any of these characterizations or of the rejection itself, claims 1, 3 – 4, 11, 13 and 37 have been amended and claim 2 has been cancelled. Applicant respectfully asserts that the clarifications made through the present amendments render the current rejection inapposite. Specifically, amended claim 1 now contains limitations formerly present in canceled claim 2, requiring the use of a two-screw mixer or a mixing kneader having at least two cooperating working shafts in step b) of the claim. These equipment-related limitations, in combination with the method steps, help to optimize the pastas resulting from the claimed method. The starch grains made partially swellable are optimally homogenized via a rheologically induced flow characteristic through compression and relaxation with a gentle flow shearing in the compaction pressure area for molding the pastas, which results in a uniform mass flow in addition to starch grain preservation. The mechanical aspects along with the method steps of the claim allow for 60% to 80% of the starch grains contained in the product to be either intact or not have burst and this high rate of starch grain preservation is a precondition for a low cooking loss, and a low slimness (please see paragraph [0041] of the present disclosure). As described in the specification, the invention exhibits a cooking loss of less than 5% of the dry mass and such a low loss is made possible through the combination of features captured in claim 1 (please see paragraph [0041] of the present disclosure).

It would not have been obvious to one of skill in the art that such treatment with a two-screw mixer or a mixer with at least two cooperating working shafts would allow for such a high degree of starch grain preservation. Even more, such positive effects on the cooking loss while having pastas comparable to those based on durum wheat would have been very surprising to one of skill in the art at the time the present application was filed. The person of skill in the art would not have learned the use of a two-screw mixer or a mixing kneader having at least two cooperating working shafts from Scharschmidt et al., or to make special provision for the integrity of the starch grains present prior to the extrusion process, as evidenced by the following language in Scharschmidt et al. “if the partial gelatinization is to be effected prior to extrusion, the

flours can be mixed and cooked in standard equipment” (please see column 4, lines 70-74 of Scharschmidt et al.).

For the reasons described above, Applicant respectfully asserts that amended claim 1 is not obvious in light of Scharschmidt et al and, because claims 3 – 13 are dependent on claim 1, these claims are also not rendered obvious by Scharschmidt et al. With regard to claim 37, this claim has also been amended in accordance with claim 1, such as through the addition of a limitation directed to a two-screw mixer or a mixing kneader having at least two cooperating working shafts and, as such, this claim is also not rendered obvious in light of Scharschmidt et al.

The Office Action then states that claims 5 and 6 are rejected as obvious in light of Scharschmidt et al. in view of Tong et al. (GB 1,097,795). Because amended claims 5 and 6 are dependent from amended claim 1, Applicants respectfully assert that claims 5 and 6 are not unpatentable under Scharschmidt et al. in view of Tong et al. The teachings of Tong et al., including the use of a conveyor belt, do not remedy the deficiencies of Scharschmidt et al. described above, including the requirement of a two-screw mixer or a mixing kneader having at least two cooperating working shafts. The Office Action also states that the Toh (U.S. 5,786,018), Kuwada (U.S. 5,916,616) and Sowbhagya (U.S. 6,083,551) references made of record but not relied upon are pertinent to the present disclosure. Applicants do not comment on any of these references other than to note that none of them remedy the deficiencies described with regard to Scharschmidt et al., including the requirement of a two-screw mixer or a mixing kneader having at least two cooperating working shafts in the claimed method.

Relevance of References BA and BB

The Office Action states that references BA and BB will not be considered because no English abstracts or discussion of the relevancy of the references was provided. Applicant provides the following statement of relevance for each of these references:

Reference BA (DE 1,301,237) – discloses a method for the production of pre-cooked pasta similar to Chinese noodles, based on flour rich in starch content or food-grade starch. Rice, corn or tapioca and so on are proposed as starting product for said flour or starch. Furthermore, the method in reference BA includes two gelatinization steps before and after molding. The International Search Authority has mentioned this reference as being relevant with respect to the novelty of independent claims 1 and 37.

Reference BA discloses that vapor is metered to the material in motion (col. 2/l. 46-48) as a first (pre)gelatinization step. It is further mentioned that before such pregelatinization, the raw material is tempered (col. 2/l. 62-63). The second gelatinization is performed after extruding. However, this document does not disclose the feature of the amended claims 1 and 37 that when metering water in step b), thereby producing a dough, the dry material is moved into a two-screw mixer or a mixing kneader with at least two cooperating working shafts (in

order to preserve the starch grains).

Reference BB (FR 956,449) – discloses an apparatus and method for manufacturing pasta based on flour or semolina of corn, thereby being a gluten-free material. The International Search Authority has mentioned this reference as being relevant with respect to the novelty of independent claims 1 and 37.

Reference BB discloses that water at a temperature of 60°C is kneaded into the raw material in a first step (p. 1/col. 1/l. 15-19). After this step, vapor is projected under pressure in an air tight container, too (p. 1/col. 1/l. 19-22). This document further discloses that such container ('chambre de cuisson') may be essentially built with two tubes that are traversed diametrically by a transporting unit comprised by a Archimedealⁿ screw (p. 2/col. 1/l. 10-13). Reference BB further discloses that the addition of water during dough-making is performed in a mixer (malaxeur 9) (p. 2/col. 1/l. 52 to col. 2/l. 53, Figure). However, reference BB does not disclose that the mixer could be a two-screw mixer or a mixing kneader with at least two cooperating working shafts, as required by present claim 1 and 37.

CONCLUSION

It is believed that the application is in condition for allowance, and such action is respectfully requested.

If a telephone conference would be of assistance in advancing prosecution of the subject application, the Examiner is invited to telephone the undersigned attorney at the telephone number provided.

Respectfully submitted,



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Dated: December 16, 2010

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